

Notice of Allowability

Application No.

10/776,330

Applicant(s)

GALZI ET AL.

Examiner

Art Unit

Michele K. Joice, Ph.D.

1636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09/11/06.
2. ☒ The allowed claim(s) is/are 1-10, 12-14 and 17-22.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20061121.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Philip DuBois on November 21, 2006.

The application has been amended as follows:

In the claims:

Claim 1 (Amended) " A process for detecting and/or quantifying non-covalent interactions between a target receptor and one of its ligands, comprising:

- preparing cells or cell fragments containing a nucleic acid sequence encoding a fluorescent protein fused with a nucleic acid sequence encoding the target receptor, the fusion between the nucleic acid sequence for the fluorescent protein and the nucleic acid sequence for the target receptor being such that the properties of the target receptor are not modified by the presence of the fluorescent protein:

[[*]]- wherein the interaction between the target receptor, and the ligand is not modified, and

[[*]]- wherein a response transduction function is not modified,

the fluorescent protein is selected from Green Fluorescent Proteins (GFPs) obtained or derived from autofluorescent proteins of Cnidarians, the molar extinction coefficient of which is greater than about $14,000 \text{ M}^{-1} \text{ cm}^{-1}$ and the quantum fluorescence yield is greater than about 0.38

- placing said cells or said cell fragments in contact with a ligand for said target receptor, said ligand labeled with a label capable of absorbing the light emitted by the fluorescent protein, the fluorescent protein being the fluorescence energy donor and the label being the fluorescence energy acceptor, or the fluorescent protein being the fluorescence energy acceptor and the label being a fluorescent substance which is a fluorescence energy donor; and
- irradiating said cells or said cell fragments at a wavelength which makes it possible either to excite the fluorescent protein or to excite the label,
- wherein the steps of placing in contact and irradiating are carried out either simultaneously or one after the other, or
- said cells or said cell fragments are placed in contact with a ligand for said target receptor said ligand labeled with a label, the cells or the ligand having been irradiated before being placed in contact,
- wherein a reduction in the amplitude of the donor's emission and/or emission signal characteristic of the acceptor's emission is measured and measuring the fluorescence energy transfer when quantifying the non-covalent interactions."

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Claim 10 (Amended) "A process for detecting and/or quantifying non-covalent interactions between a target G protein coupled receptor and a G protein, in order to identify the compounds which are biologically active with respect to the receptor, and which are capable of forming a reversible non-covalent interaction with said receptor, wherein:

- cells or fragments of cells are prepared containing a nucleic acid sequence encoding for a fluorescent protein fused with a nucleic acid encoding for a receptor coupled to the G proteins, the fusion between the nucleic acid encoding for the fluorescent protein and the nucleic acid encoding for said receptor being so that the properties of the receptor are not modified by the presence of the fluorescent protein, wherein,
 - [[*]]- the interaction between the target receptor and the G protein is not modified,
 - [[*]]- the interaction between the target receptor and the biologically active molecule is not modified,
 - [[*]]- a response transduction function is not modified,
 - [[*]]- the fluorescent protein is selected from Green Fluorescent Proteins (GFPs) obtained or derived from autofluorescent proteins of Cnidarians, the molar extinction coefficient of which is greater than about $14,000 \text{ M}^{-1} \text{ cm}^{-1}$ and the quantum fluorescence yield of which is greater than about 0.38,
- wherein the G protein is labeled with a label selected from:

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- Green Fluorescent Proteins (GFPs) obtained or derived from autofluorescent proteins of Cnidarians, the the molar extinction coefficient of which is greater than about $14,000 \text{ M}^{-1} \text{ cm}^{-1}$ and the quantum fluorescence yield of which is greater than about 0.38,
- fluorescent chemicals compounds, and
- non-fluorescent chemical compounds belonging to the Acid Violet group, Acid Red group, alizarins, aluminon, azocarmines, basic fuchsin, Bordeaux R and Carmine.

wherein the fluorescent protein and said label being such that they transfer energy from one to the other, wherein the fluorescent protein is an energy donor or said label is an energy donor,


detecting the interaction between the target receptor labeled with the fluorescent protein and the G protein labeled with said label by fluorescence energy transfer and measuring the fluorescence energy transfer when quantifying the non-covalent interactions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michele K. Joike, Ph.D. whose telephone number is 571-272-5915. The examiner can normally be reached on M-F, 9:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Irem Yucel, Ph.D. can be reached on 571-272-0781. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michele K Joike, Ph.D.
Examiner
Art Unit 1636


DAVID GUZO
PRIMARY EXAMINER